



Mechanical Bearing, Ball-Screw Stage

PRO225SL



Precise & Robust Linear Motion for All

The PRO225SL provides an optimal balance of positioning performance, payload capacity and size. Compared to the narrower PRO190SL, PRO225SL can carry considerably higher payloads due to its larger bearings and motor. Combining superior craftsmanship with the highest quality components, PRO225SL stages consistently and reliably deliver best-in-class positioning performance. Thoughtfully engineered features and options, coupled with competitive pricing, make PRO225SL stages the ideal choice for streamlined integration into a wide variety of precision systems, machines and processes.

Key Applications

PRO225SL mechanical bearing, ball-screw stages are extremely versatile, trusted and proven in medium- and high-performance applications, such as:

- ◆ Laser material processing
- ◆ Precision metrology, inspection & microscopy
- ◆ Electronics & circuit board manufacturing & inspection
- ◆ Display processing
- ◆ Synchrotron & light source experiments
- ◆ Medical device manufacturing
- ◆ Semiconductor fabrication
- ◆ Fiber optics & silicon photonics processing
- ◆ Additive manufacturing & precision assembly

KEY FEATURES:

- ◆ Provides **SUBSTANTIAL PAYLOAD-CARRYING** capacity
- ◆ **BEST-IN-CLASS GEOMETRIC PERFORMANCE** ensures superior workpoint accuracy
- ◆ **EXCELLENT MOTION & POSITIONING PERFORMANCE** in a cost-effective package
- ◆ Rugged, reliable construction is ideal for **VERSATILE INDUSTRIAL USE**
- ◆ Hardcover & side seals offer **PROTECTION AGAINST CONTAMINATION & PARTICULATES**
- ◆ **VACUUM- & CLEANROOM-COMPATIBLE** versions available

PRO225SL SPECIFICATIONS

Mechanical Specifications		PRO225SL							
Travel		100	200	300	400	500	600	800	1000
Accuracy⁽¹⁾	Standard	±6 µm	±8 µm	±9.5 µm	±11 µm	±13 µm	±15 µm	±17 µm	±18 µm
	Calibrated	±1 µm	±1 µm	±1.5 µm	±1.5 µm	±2 µm	±2 µm	±2.5 µm	±3 µm
Resolution (Min. Incremental Motion)		0.1 µm ⁽²⁾ ; 1.0 µm ⁽³⁾							
Bidirectional Repeatability⁽¹⁾		±1 µm							
Horizontal Straightness⁽¹⁾		±2 µm	±2.5 µm	±3.5 µm	±4.5 µm	±5.5 µm	±6.5 µm	±8 µm	±9.5 µm
Vertical Straightness⁽¹⁾		±2 µm	±2.5 µm	±3.5 µm	±4.5 µm	±5.5 µm	±6.5 µm	±8 µm	±9.5 µm
Pitch		29 µrad	39 µrad	50 µrad	60 µrad	70 µrad	80 µrad	90 µrad	110 µrad
Roll		29 µrad	39 µrad	50 µrad	60 µrad	70 µrad	80 µrad	90 µrad	110 µrad
Yaw		29 µrad	39 µrad	50 µrad	60 µrad	70 µrad	80 µrad	90 µrad	110 µrad
Maximum Speed⁽⁴⁾		220 mm/s							140 mm/s
Maximum Acceleration⁽⁴⁾		Function of Motor, Amplifier Selection, Payload, and Maximum Axial Load							
Load Capacity⁽⁵⁾	Horizontal	100 kg							
	Vertical (Axial)	60 kg							
	Side	100 kg							
Moving Mass (w/ Tabletop)		7.3 kg							
Stage Mass (No Motor)		19.8 kg	22.2 kg	24.5 kg	26.9 kg	29.2 kg	31.5 kg	36.2 kg	40.9 kg
Material		Anodized Aluminum							
MTBF (Mean Time Between Failure)		20,000 Hours							

Notes:

1. Certified with -PL1/-PL2 options.
2. Achieved with Aerotech rotary motor with amplified sine encoder.
3. Achieved with Aerotech rotary motor with 2500 cnts/rev digital encoder.
4. Requires the selection of an appropriate amplifier with sufficient voltage and current.
5. Axis-orientation for on-axis loading is listed.
6. Specifications are for single-axis systems measured 25 mm above the tabletop. Performance of multi-axis systems is payload and workpoint dependent. Contact factory for multi-axis applications.

Electrical Specifications	
Drive System	Brushless Linear Servomotor
Feedback (Rotary Encoder)⁽¹⁾	Incremental – 1000 lines/rev (1 Vpp) and 2500 lines/rev (TTL)
Maximum Bus Voltage	340 VDC
Limit Switches	5 V, Normally-Closed

1. Requires the selection of a motor option.

PRO225SL ORDERING OPTIONS

Travel (Required)

- 0100 100 mm travel stage
- 0200 200 mm travel stage
- 0300 300 mm travel stage
- 0400 400 mm travel stage
- 0500 500 mm travel stage
- 0600 600 mm travel stage
- 0800 800 mm travel stage
- 1000 1000 mm travel stage

Other travel options are available upon request. Contact Aerotech for more information.

Tabletop (Optional)

- TT1 Tabletop with metric dimension mounting

Other tabletop options are available upon request. Contact Aerotech for more information.

Motor (Optional)

- M5 BM250 brushless servomotor and 2500-line TTL encoder
- M6 BM250 brushless servomotor, 2500-line TTL encoder, and brake
- M7 BM250 brushless servomotor and 1000-line 1 Vpp encoder
- M8 BM250 brushless servomotor, 1000-line 1 Vpp encoder, and brake

Other motor options are available upon request. Contact Aerotech for more information.

Motor Orientation (Optional)

- 2 Bottom cable exit, optional orientation
- 3 Left-side cable exit, standard orientation

Other motor orientation options are available upon request. Contact Aerotech for more information.

Limits (Required)

- LI1 Normally-closed limit switches; 5 VDC with 9-Pin D connector

Other limit options are available upon request. Contact Aerotech for more information.

Coupling (Optional)

- CP1 Coupling for 0.500 inch diameter shaft

Lifting Hardware (Optional)

- LF Lifting hardware

Note: Lifting option only available on travels 300 mm and greater. Lifting should never be ordered on the upper-axis of an XY set (only order on lower-axis).

Metrology (Required)

- PL0 No metrology performance plots
- PL1 Metrology, uncalibrated with performance plots
- PL2 Metrology, calibrated (HALAR) with performance plots

PRO225SL ORDERING OPTIONS

Integration (Required)

Aerotech offers both standard and custom integration services to help you get your system fully operational as quickly as possible. The following standard integration options are available for this system. Please consult Aerotech if you are unsure what level of integration is required or if you desire custom integration support with your system.

-TAS Integration - Test as system

Testing, integration and documentation of a group of components as a complete system that will be used together (ex: drive, controller and stage). This includes parameter file generation, system tuning and documentation of the system configuration.

-TAC Integration - Test as components

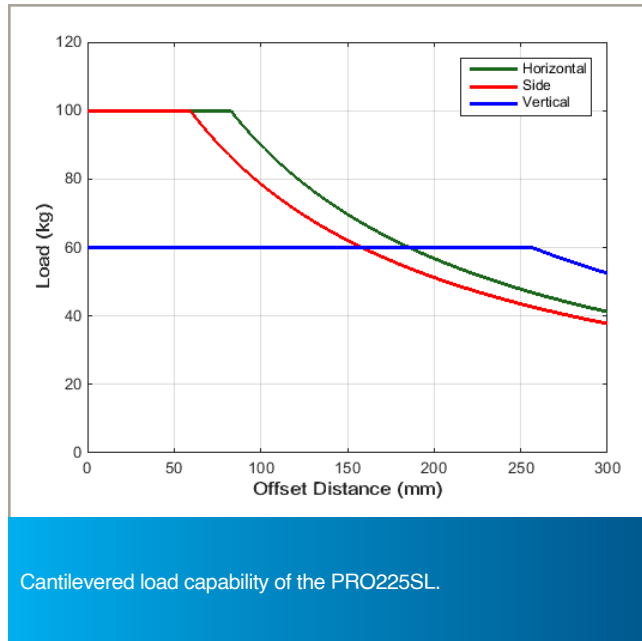
Testing and integration of individual items as discrete components. This is typically used for spare parts, replacement parts or items that will not be used or shipped together (ex: stage only). These components may or may not be part of a larger system.

Accessories (To Be Ordered As Separate Line Item)

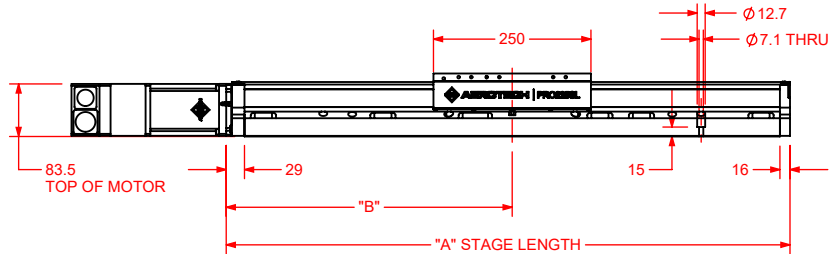
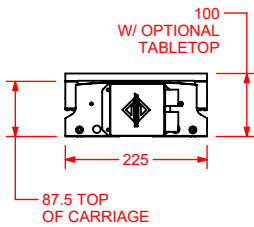
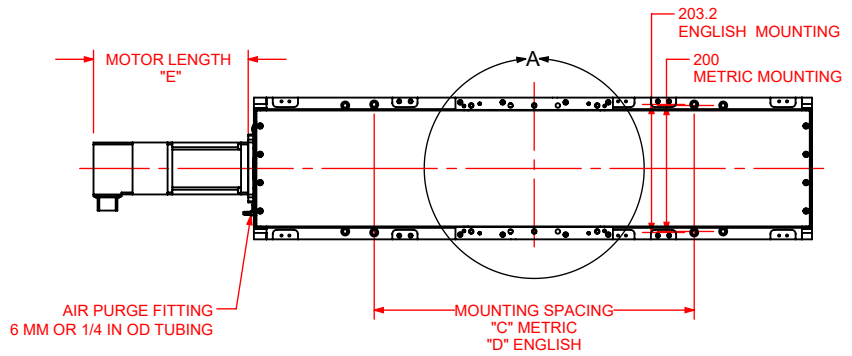
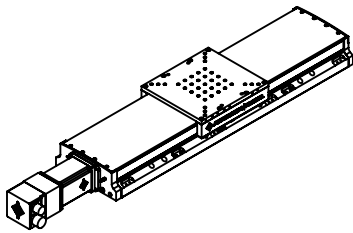
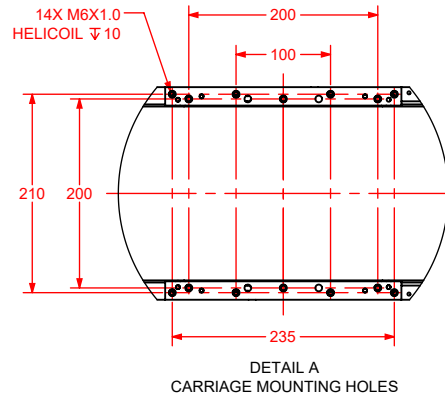
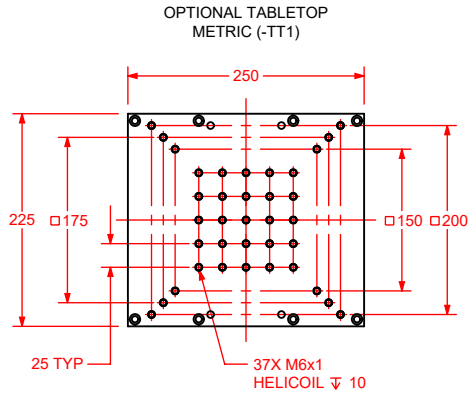
ALIGN-NPA	Non-precision XY assembly
ALIGN-NPAZ	Non-precision XZ or YZ assembly
ALIGN-PA10	XY assembly; 10 arc sec orthogonality. Alignment to within 7 microns orthogonality for short travel stages.
ALIGN-PA10Z	XZ or YZ assembly with L-bracket; 10 arc second orthogonality. Alignment to within 10 microns orthogonality for short travel stages.
ALIGN-PA5	XY assembly; 5 arc sec orthogonality. Alignment to within 3 microns orthogonality for short travel stages.
ALIGN-PA5Z	XZ or YZ assembly with L-bracket; 5 arc second orthogonality. Alignment to within 5 microns orthogonality for short travel stages.
HDZ225	Right angle L-bracket for PRO225SL-100, PRO225SL-150, and PRO225SL-200 only.



PRO225SL SPECIFICATIONS



PRO225SL DIMENSIONS



	DIMENSION
OPTION	E
-M5, -M7	190
-M6, -M8	245.6

BASIC MODEL	NOMINAL TRAVEL	ELEC LIMIT TRAVEL	MECH LIMIT TRAVEL	A	B	C	D
PRO225SL-0100	100	104.2-109	129.4	495	254	200, 350	203.2
PRO225SL-0200	200	205.8-210.6	229.4	595	304	200, 350	203.2
PRO225SL-0300	300	307.4-312.2	329.4	695	354	200, 600	203.2
PRO225SL-0400	400	409-413.8	429.4	795	404	200, 600	203.2, 508
PRO225SL-0500	500	510.6-515.4	529.4	895	454	200, 600	203.2, 508
PRO225SL-0600	600	612.2-617	629.4	995	504	200, 600	203.2, 508
PRO225SL-0800	800	815.4-820.2	829.4	1195	604	200, 600, 1000	203.2, 711.2
PRO225SL-1000	1000	1018.6-1023.4	1029.4	1395	704	200, 600, 1000	203.2, 711.2, 990.6

DIMENSIONS: MILLIMETERS

